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IMPROVING THE INTERNATIONAL CURRENCY MANAGEMENT SYSTEM OF COMPASSION INTERNATIONAL

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9 April 1996

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EXECUTIVE SUMMARY

The increasing global participation in Compassion International funding (both in total amounts and in number of contributing countries) presses us to evaluate whether its current international currency management system best serves Compassion's mission. Compassion deals with currencies from twenty-nine countries. In Fiscal Year 94-95, \$49.4 million worth of funds were exposed to the fluctuations in foreign exchange rates. Compassion paid approximately \$370,500 in transaction costs to exchange these funds. These fluctuations and costs make planning difficult and reduce the amount of funds which Compassion can spend on services for children.

Given the constraints imposed by the international financial environment in which Compassion operates, the organization does a good job of managing its foreign exchange transactions. This project shows why Compassion is already doing well and how it could potentially do better.

Major findings:

- About 75-80% of the transaction costs are unavoidable. These costs are incurred when exchanging for the currencies of developing countries, regardless of whether the US dollar is used as an intermediary currency or not.
- Foreign exchange markets do not generally offer contractual hedging tools (e.g., forwards, futures, swaps) for currency transactions involving developing country currencies – the end-use currencies needed by Compassion.
- Currency transactions involving developing country currencies account for most of the exchange rate volatility faced by Compassion. Therefore, use of these hedging tools when exchanging foreign contributions for US dollars would not yield significant benefits relative to Compassion's total exposure.
- It is unknown whether eliminating the US dollar as an intermediary currency will increase the amounts disbursed to developing countries. Potential gains could come from the reduction of transaction costs and, possibly, the limited exploitation of arbitrage opportunities.
- No significant financial difference exists between holding excess funds in a US dollar pool, and holding such funds in a diversified currency portfolio. This finding assumes funds in any currency would be invested in Treasury bills or similar low-risk investments.

Recommended course of action:

- Compassion should seek out competitive cross-rates for direct exchange from contributing country currencies to developing country currencies. Cross-rates are competitive if the amount of developing country currency realized is more than the amount which would have been realized by using the US dollar as an intermediary currency (as under the current system).
- If the sources for competitive rates are found, Compassion should develop a relationship with an international banking institution which can provide speedy, reliable service for multiple currencies.
- Compassion should then re-evaluate its investment strategy and investigate foreign investment opportunities. The results of that investigation will determine whether Compassion should hold any excess funds in foreign currencies, or fully deplete foreign currency accounts each month.

1. INTRODUCTION

Compassion International funds development and assistance projects for children around the world. The purpose of this analysis is to provide a framework for evaluating and improving Compassion's international currency management system. The organization receives donations from sponsors in six Western industrialized nations and funds projects in 23 developing countries. The increasing global participation in Compassion funding (both in total amounts and in number of contributing countries) presses us to evaluate whether the current system best serves Compassion's mission. Does it really make sense to funnel all funding into US currency before disbursing it to the field offices in developing countries? What value might be created by doing it another way? What system would maximize the value of the local currency received by field offices and be politically, legally, morally, and operationally acceptable to Compassion, the cooperating organizations, and their supporters?

This project addresses the central question "How should Compassion International structure a system to handle its flow of funds through the international currency market?" The flow of funds can be broken down into three phases. *Collection* refers to the receipt of funds from the five cooperating country organizations (COOPs) plus United States sources.¹ *Holding* refers to the stockpiling/safeguarding of funds from the time they are collected until they are disbursed to field offices in the developing countries which host

¹ The term "COOP" will be used to identify the five foreign countries from which Compassion receives contributions. "COOP currencies" refers to the respective currencies of those five countries.

Compassion International projects (host countries).² *Disbursement* refers to the transfer of money to the host countries where it is expended. This project covers three primary topics:

1. What foreign exchange exposure and costs does Compassion face under its current international currency management system?
2. What measures or hedges can Compassion use to manage the exposure and minimize the costs?
3. What subsequent course of action should Compassion take given the results of this analysis?

The next section describes how the paper is organized to address these topics.

² The term "host" will be used to identify the 23 developing countries in which Compassion funds projects for children. "Host currencies" refers to the respective currencies of those 23 countries.

2. OVERVIEW

Current System, the first substantive section, provides background information about the organization itself. A description of Compassion's current currency management operations provides a common base of understanding from which to discuss the subsequent analysis. Following the description is a short discussion on why these financial operations should be reviewed. This section concludes with an enumeration of some the key tenets of Compassion's operating philosophy which have a direct impact on currency management.

The next section – **Identification and Measurement of Exposure** – really begins the analysis of Compassion's currency management. This section identifies and measures the currency exposure faced by the organization, and illustrates how this exposure creates uncertainty which makes budgeting and other planning difficult. The resulting monthly variance in funds detracts from the services provided to the children.

The following two sections analyze potential measures which can be taken to manage this exposure. **Operational Measures** discusses the financial operations of Compassion. Operational measures involve systematic changes in the direction and handling of currency flows. The project breaks the discussion into three sub-topics: *Reduction of Transaction Costs*, *Exploitation of Arbitrage Opportunities*, and *Diversification of the Currency Portfolio*. The analysis shows that by directly exchanging COOP currency for host currency, Compassion may be able to eliminate some transaction costs and, possibly, take advantage of some limited arbitrage opportunities. This section also includes a model which demonstrates that holding funds over a long

period in multiple currencies does not provide financial results which are significantly different from holding all funds in US dollars.

The second section on managing exposure discusses **Contractual Hedges**, financial tools generally used to achieve short-term reduction of uncertainty. The project first describes how hedging manages exposure. Analysis reveals, however, that Compassion cannot significantly benefit from these tools: Financial markets do not provide them for use with the host currencies, and using the hedges with COOP currencies does little to manage Compassion's total exposure.

Finally, based on the analysis up to that point, the report recommends the **Next Steps for Compassion to Take** in the process of evaluating and improving its international currency management system. The first recommendation discusses why Compassion should *Seek Out Competitive Cross-rates* for direct exchange from COOP currency to host currency. If competitive cross-rates can be found, then the organization should *Initiate a Relationship with an International Banking Institution*. Finally, once Compassion decides to bank in multiple currencies, it should *Investigate Overseas Investment Opportunities*.

This project shows that, on the whole, Compassion does a good job of managing its foreign exchange transactions. The primary improvement would come if competitive cross-rates could be found which make direct exchanges from COOP currency to host currency more valuable than by using the US dollar as an intermediary currency. In such a case, Compassion would be able to disburse more host currency than it currently does; thus, the sponsored children would receive more services.

3. CURRENT SYSTEM

Compassion International is a non-profit Christian organization which funds children's development and assistance activities in 23 developing countries (referred to as *host countries*) in Africa, Asia, Middle America, and South America.³ Compassion cooperates with organizations in five Western industrialized countries: Australia, Canada, France, New Zealand, and the United Kingdom.⁴ These organizations, called COOPs, provide about 30% of the total funding for Compassion. The primary funding from all countries comes from individual donors who sponsor a specific host country child (or children) by contributing a pledged amount on a monthly basis.

Each month, the COOPs inform Compassion how much money they will be contributing. The amount from each COOP will vary based on the number of sponsors in the COOP and the contribution amount per sponsor (which varies across countries and sometimes within countries). Compassion totals the contributions and determines an amount per child based on the total number of children enrolled in Compassion projects throughout the world. Then an amount to be disbursed to each host country is calculated based on the number of children enrolled in each. Currently, the rate per child is the same regardless of which host country a child lives in. The COOPs actually convert all of their contributions to US dollars and transfer them to Compassion where they are pooled with American contributions. [The Canadian organization is an exception: it converts its contribution to US dollars, but transfers the money directly to an offshore trading

³ Compassion also funds several children's projects in the US. They are fully funded by US sources; therefore, they do not affect this analysis.

⁴ Some money is contributed from Spain, but it is handled by the UK.

company for conversion to host currency. The Canadian approach produces the same financial results as the normal method.] The pool of money is then exchanged through a variety of methods into host country currency and disbursed to each host. The following flow-chart (Figure 1) illustrates the process.

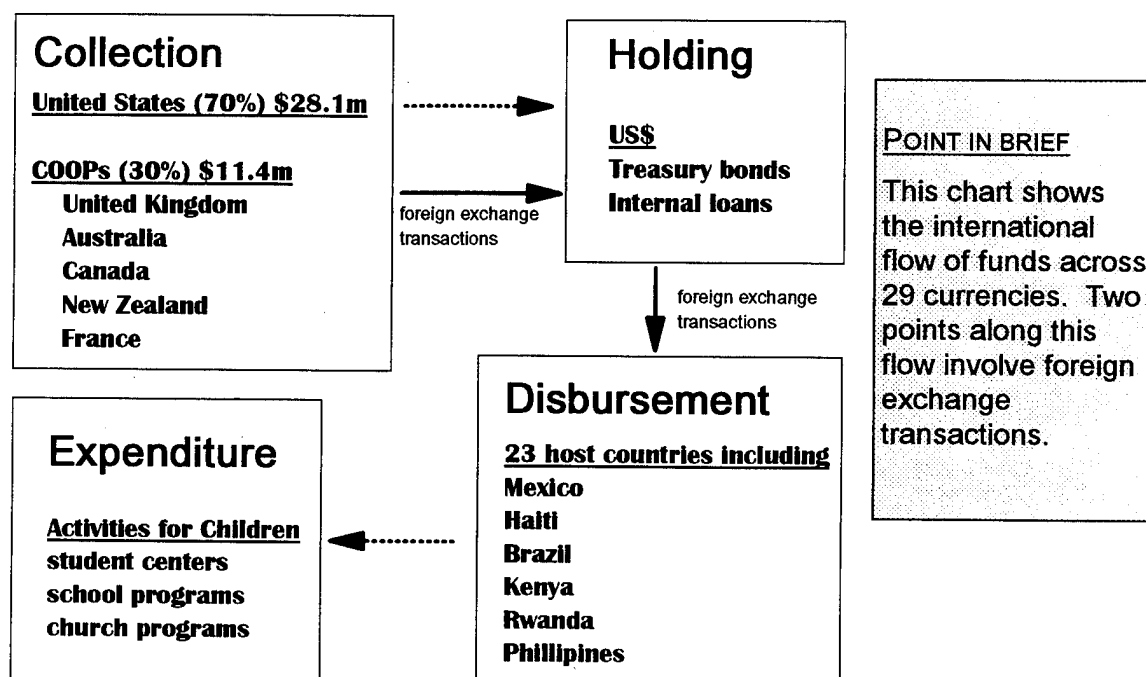


Figure 1: Compassion's International Currency Management System

3.1 WHY REVIEW THE PROCESS

Several issues related to this process have caused Compassion to ask whether this is really the best way to operate. The current process allows Compassion to centrally control all funding and simplifies the exchange procedures. Because the US dollar is used as an intermediary currency in the exchange process, it is easier to separate the collection

and disbursement functions. Additionally, pooling the funds makes it easier to determine the allocation of funds to the host countries. Nevertheless, there is a question as to whether this is really the best way to operate. COOP contributions are exchanged twice (except for the small portion which covers administrative costs in the US). Furthermore, when the US dollar depreciates, host countries receive less funding. Finally, there is the possibility that by going through the US dollar, COOP currency strength is diluted vis-à-vis host currencies (i.e., there could be a triangular arbitrage opportunity by converting COOP currency directly into host currency). Added to these financial concerns are the "political" or perceptive considerations of the COOP organizations. While these political considerations do not override the financial ones (and this project does not specifically address the non-financial aspects of currency management), it is important to note that they exist. Canada provides a case in point. The donors from the COOP countries, and the respective organizations which handle their funds, do not relish the idea that their funds are converted to US dollars and go to an American organization. While they realize that the funding eventually makes it to the targeted recipients (host country children), from a perception management viewpoint, they would feel better about contributing if they could see the money go directly from British pounds to Kenyan shilling, or from Australian dollars to Ecuadorian sucres.

3.2 COMPASSION'S OPERATING PHILOSOPHY

Compassion's operating philosophy includes several tenets which are important for the following analysis. First, they will not incur debt in order to fund their activities. They believe that all of their activities should be supported in full by contributors on a current,

on-going basis, and that they should not presume an increase in future support merely to justify debt in order to maintain or increase current operations. Second, they operate within the law of the countries in which they have operations. This tenet can make operations more costly and sometimes very difficult. Specifically, Compassion could often get much better foreign exchange rates by dealing on the black market; nevertheless, Compassion takes a cut in efficiency in order to maintain legality. Third, Compassion weighs speed over efficiency when disbursing funds to host countries. The host countries operate on a month-to-month basis, and generally, by the end of the month have depleted all of their funds. In fact, the goal of Compassion is that all funds be depleted by then (and in some cases sooner) because in most host countries, the local currency is depreciating. Therefore, replenishment of funds needs to occur on a timely and predictable basis (i.e., on a set day at the beginning of the month). Fourth, Compassion considers itself to be a conservative, risk-averse organization when it comes to finances. Fifth, to the extent possible, headquarters wants to keep field personnel out of the currency exchange business. Field personnel are committed to other operational aspects without adding currency management to their duties. Additionally, tasking these personnel with this responsibility opens the door for potential accounting and control problems.

4. IDENTIFICATION AND MEASUREMENT OF EXPOSURE

Managing Compassion International's foreign exchange exposure is one of the primary considerations in evaluating the international currency management. Foreign exchange exposure is the potential for financial gain or loss due to fluctuation in the foreign exchange rates. These fluctuations change the expected results of Compassion's international currency transactions. Funding faces exposure at two points in the current system: 1) when COOP contributions are exchanged for US dollars, and 2) when the US dollar pool is exchanged for host currencies. Even if the COOP countries contribute the same amount of their domestic currency each month, the US dollar value of these contributions will vary. Additionally, the amount of host currency per US dollar which is disbursed will vary from month to month. Consequently, the total amount of host currency received each month by the field offices may be more or less than "expected" based on the budget projections for the year.

4.1 FIRST POINT OF EXPOSURE: COOP CURRENCY TO US DOLLAR

The value of COOP country contributions is affected by the volatility of the foreign exchange market. The following graph (Figure 2) illustrates some of the fluctuation Compassion faced as it collected COOP country donations from January 1985 through December 1995. The curve shows the average percent change of the exchange rates (in foreign currency per US dollar) of the basket of currencies. Whenever the curve slopes down, the US dollar weakens, or loses buying power. Whenever the curve slopes up, the US dollar strengthens, or gains buying power. For example, between January 1985 and January 1988, the curve drops greatly. During this period, the US dollar

weakened by approximately 43% vis-à-vis the three foreign currencies used in this model. Accordingly, the amount of US dollars received per Canadian dollar, French franc, and British pound increased. Conversely, the strengthening of the dollar between July 1992 and February 1993, resulted in fewer US dollars per foreign currency unit.

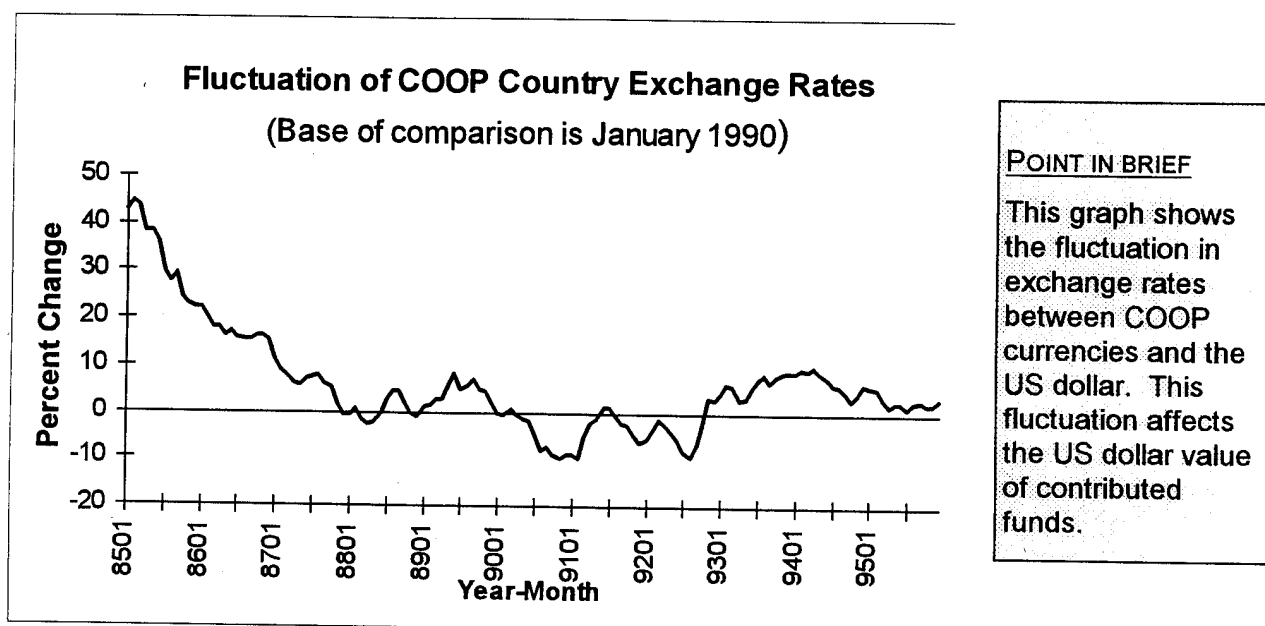


Figure 2: Average Percent Change in Exchange Rate (Canadian dollars, French francs, British pounds per US dollar)

Using monthly exchange rate data for Canada, France, and the United Kingdom,⁵ I calculated the percent difference between the monthly exchange rate and the January 1990 rate, for each country.⁶ The curve shows the average percent difference of the three countries for each month. For example, I calculated the percent difference between the British pounds per US dollar rate for July 1992 and the rate for January 1990.⁷ I then

⁵ The absence of Australia and New Zealand data from this particular graph does not significantly affect the results. These countries were included in a similar five-year analysis and the results very closely resembled those found here.

⁶ I selected January 1990 because it fell near the middle of the eleven year period. It is the relative differences in exchange rates that is important, not the difference with any particular period.

⁷ Formula used to calculate percent difference:

calculated similar percent differences for the Canadian dollar per US dollar rate, and for the French franc per US dollar rate. The average of these three percent differences is indicated by the position of the curve above July 1992 on the chart. (Note that the percent difference for January 1990 is zero.)

For the Fiscal Year ending 30 June 1995 (FY 94/95), the five COOP countries contributed 29% of the \$39.5 million of Compassion annual program grants and related administrative costs.⁸ That means that \$11.4 million faced exposure coming into the US dollar pool, and \$38 million faced exposure as it was disbursed to the host countries.⁹ Exposure can be good or bad depending on which way the foreign exchange rate fluctuates. For example, when the dollar weakens, the US dollar value of a specific amount of COOP donations increases. However, a weaker dollar also means that Compassion will be able to buy less host currency per dollar. While these two phenomena seem to offset each other, the dollar does not move the same amount against every currency. The exposure faced by COOP contributions converted into US dollars is not nullified by offsetting exposure faced when US dollars are converted to host currency. Furthermore, the longer Compassion holds funding in dollars before it is disbursed, the more any certainty of offsetting effects diminishes. Compassion should be concerned about both instances of exposure.

$$\text{percent difference} = \frac{(\text{pounds / dollar})_{\text{Jul 92}} - (\text{pounds / dollar})_{\text{Jan 90}}}{(\text{pounds / dollar})_{\text{Jan 90}}} \times 100\%$$

⁸ These amounts exclude gifts-in-kind (non-monetary gifts), and certain US programs and administrative costs.

⁹ The \$11.4 million is the 29% contributed by COOP countries. The \$38 million is the amount of money that was disbursed. The \$1.5 million difference between the disbursement figure and the \$39.5 million is due to administrative costs in the US paid for by COOP countries.

4.2 SECOND POINT OF EXPOSURE: US DOLLAR TO HOST CURRENCY

Exposure results in uncertainty which can make planning difficult and cause anxiety in the organization. The table in the Appendix (page 39) shows the exchange rates which were used for budgeting purposes and the rates which actually existed in FY 94-95. For Kenya, exchange rates fluctuated between 57.02 and 44.30 shilling per US dollar. Monthly disbursements to Kenya averaged \$202,448 in that fiscal year. Therefore, the Kenya office received between 8,968,446 and 11,543,585 shilling each month. A two and a half million shilling range creates a lot of uncertainty! Moreover, all of the rates were worse than the 65 shilling/US\$ projected in the budget.

The fluctuation and resulting uncertainty affect the children helped by Compassion's projects. Uncertainty makes it more difficult for the field offices to make long-term plans for funding projects. While unexpected surpluses in funding are welcome, unexpected decreases limit the services received by the children. Compassion does not drop sponsored children from the programs as a result of these decreases; however, lesser funds do mean that fewer services can be funded and provided. The fluctuation in exchange rates varies by currency; thus some host countries face greater uncertainty than others. In addition, some of these countries face greater long-term reduction in real purchasing power as a result of currency valuation.

Even though exchange rates may be increasing (more host currency per US dollar), purchasing power may be decreasing. By purchasing power, I mean the amount of host country goods and services which can be purchased with a given amount of US dollars. As the following graph illustrates (Figure 3), during 1994, the Ethiopian exchange rate was almost always higher than in the previous December (the difference shown here as a

percentage of the December 1993 rate). However, inflation rates were even higher; therefore, relative purchasing power decreased sharply. The absence of a competitive market results in this imbalance. Compassion is required to accept whatever rate is offered by the central bank of Ethiopia.

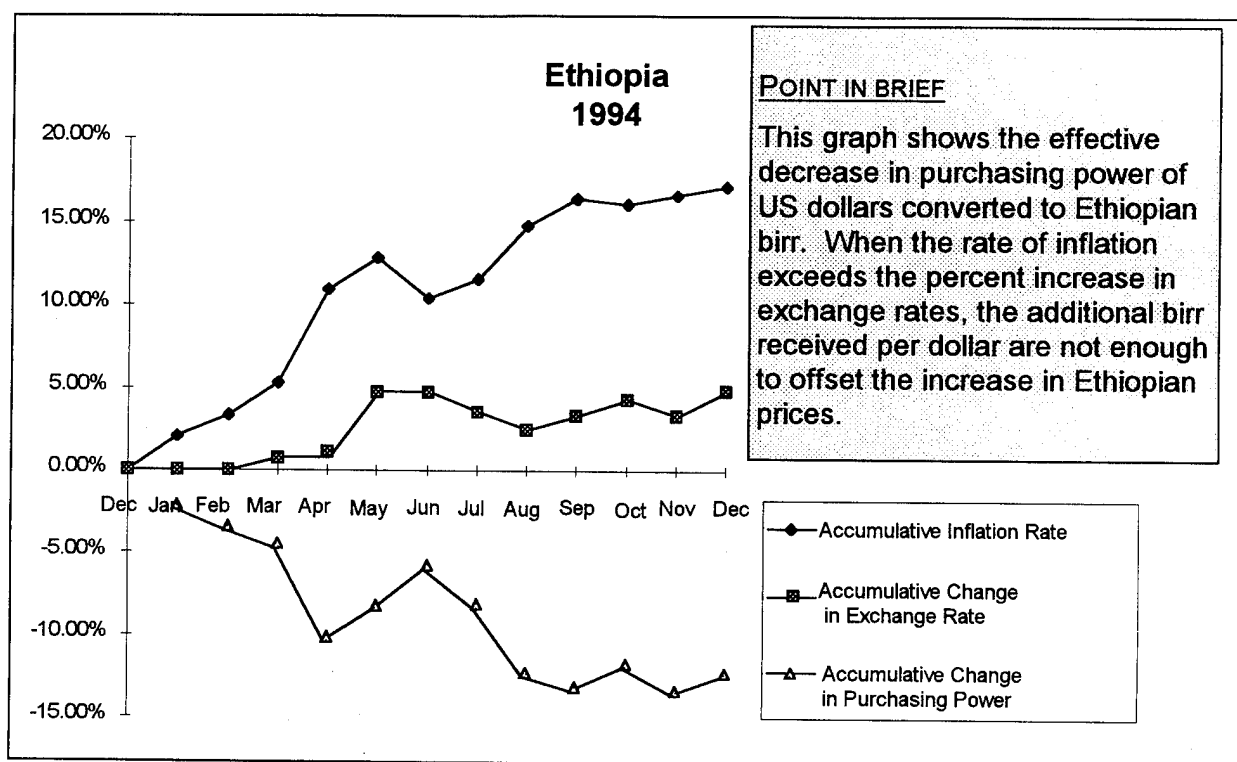


Figure 3: Loss of real purchasing power in Ethiopia (Source: Rob Davis, Child Ministries Operations Director, Compassion International)

There are several things that Compassion can potentially do to both improve the efficiency of its system and hedge against foreign currency exposure. Compassion already does some of these things whether it fully realizes the benefits of its actions or not. In other ways, Compassion is leaving itself open to risk when in fact it may think it is acting conservatively. Sometimes that exposure is good; in other cases, Compassion is doing the

best it can do to overcome any negative effects. First, I will examine some operational measures to efficiency and hedging. Then I will discuss the contractual tools of hedging.

5. OPERATIONAL MEASURES

Operational measures provide several ways to effectively manage currency exposure and reduce the costs related to exchange. These measures involve systematic changes in the flow of funds. For Compassion International, the primary issue is whether to use the US dollar as an intermediary currency or to exchange COOP currency directly for host currency. This project addresses three aspects of the currency flow issue: transaction costs, arbitrage opportunities, and portfolio diversity.

The value of any operational measures depends upon the availability of competitive cross-rates for direct exchange from COOP currency into host currency. If Compassion can get competitive exchange rates for converting COOP currency directly into host currency, then potential benefits exist in each of these areas. Compassion will need to investigate the opportunities for getting these competitive rates in order to make a more complete determination of the benefits of direct exchange. Sections 5.2 and 7.1 discuss this issue more fully.

5.1 REDUCTION OF TRANSACTION COSTS

Transaction costs reduce the amount of currency received from an exchange transaction. Financial institutions charge these costs in order to cover their expenses and make a profit. Compassion incurs transaction costs each time it exchanges currency. The financial institution providing the exchange generally hides these costs in the quoted exchange rates; nevertheless, the cost are real and decrease the amount of host currency eventually disbursed. Since Compassion uses the US dollar as an intermediary currency,

two transactions are required in order to convert COOP country contributions into host currency.

The cost imposed varies according to the specific details of a transaction. Transaction costs vary according to the currencies exchanged, the amount involved, the volatility of the exchange rate, expected changes in the rate, the liquidity of the currencies, and so forth; additionally, the costs differ according to the financial institution and a client's relationship with that institution. There is not a set percentage which is charged.¹⁰

In order to estimate the savings which could be achieved by reducing the number of transactions, I tested two hypothetical scenarios with a bank. In the first case, I converted *X-amount* of British pounds into 250,000 US dollars into German deuschemarks. In the second case, I converted the same amount of pounds directly into deuschemarks. I saved $\frac{3}{4}$ to 1% in the second case. Let us assume that the transaction cost for exchanging the COOP currencies for US dollars is $\frac{3}{4}\%$. A rough approximation of the per annum costs directly incurred by converting the COOP currencies to US dollars equals \$85,500 (that is $\frac{3}{4}\%$ of \$11.4 million). Assuming the same percentage cost, Compassion pays \$285,000 per annum in transaction costs to convert US dollars into host currencies (that is $\frac{3}{4}\%$ of \$38 million). These estimates are probably conservative; the actual costs would likely be higher because the host currencies are more "exotic" and because each transaction involves smaller amounts than the hypothetical scenario.

By directly exchanging COOP currency for host currency, Compassion could save the \$85,500. It would still incur the costs associated with buying host currency. The total

¹⁰ Based in part on a discussion with John Schweizer, International Department of Bay Bank in Boston, MA.

costs for the direct exchange (including conversion of funds originally contributed in US dollars) may be more or less than the \$285,000. However, if competitive rates can be found, Compassion would almost certainly net some total savings (by not paying to exchange COOP currency for US dollars). The important thing is to realize that costs are incurred with every transaction. The actual monetary benefit of a direct exchange would have to be measured according to the quoted exchange rate itself.

That quoted rate incorporates the actual exchange rate plus a percentage for the transaction cost. Theoretically, the only benefit received by directly exchanging currencies versus using an intermediary currency is the savings in transaction costs. The next section discusses the potential for exploiting arbitrage opportunities based on actual exchange rate differences.

5.2 EXPLOITATION OF ARBITRAGE OPPORTUNITIES

Exploitation of arbitrage opportunities would increase the amount of funds disbursed to host countries. These opportunities exist when one can buy a currency at one price while simultaneously selling it at a more advantageous price, thereby obtaining a risk-free profit. Compassion would be most interested in a situation where a certain amount of US dollars would buy less host currency than an equivalent value in COOP currency could buy. For example, say \$1000 bought 6170 Ethiopian birr. If \$1000 worth of British pounds (650.49 pounds at .65049 pounds per dollar) could buy 7000 birr, then it would be very beneficial to exchange pounds directly for birr.

The possibility exists that arbitrage opportunities could be found among the host currencies due to the fluctuation of their exchange rates, the inefficiency of their markets,

and the fact that fewer organizations and companies would seek their usually depreciating and volatile currencies. This possibility has been supported by at least one published source.¹¹ Testing this hypothesis has been quite troublesome due to the difficulty of obtaining the necessary cross-rates. Additionally, several other considerations lead to the conclusion that seeking out arbitrage opportunities may not be the most efficient alternative for Compassion. First, it would require a lot of information collection and processing, and it would have to be done every month. Compassion does not really have the manpower to handle the additional workload. Arbitrage opportunities which Compassion could capitalize on are not going to be available in the big markets of New York or London. Instead they would be found locally, which means in-country staffs would have to get involved in the process.

Second, even if these opportunities are found, they are not likely to yield huge benefits for Compassion, especially compared to the effort to identify them. Most host countries receive \$100,000 to \$200,000 per month. Significant benefits from arbitrage generally only come when transactions involve a million dollars or more. Finally, one can only exchange for some developing country currencies by using US dollars. In the large foreign currency markets, financial institutions quite often use the US dollar as a vehicle currency when exchanging two other currencies. The more exotic the currency, the more likely the dollar is used as a vehicle. In other words, the financial institution may quote a cross-rate for British pounds to Mexican pesos, but in practice, it actually converts the pounds to dollars and then the dollars to pesos. Institutions do this because it is easier to

¹¹ Bill Millar, *Global Treasury Management* (USA: HarperBusiness, 1991). p. 107-8.

find one or more holders of pesos who wants dollars than it is to find one who wants pounds (and in an equivalent amount as the holder of pounds who wants pesos).

Nevertheless, arbitrage opportunities remain a potential area for investigation. Compassion should seek out these opportunities indirectly by finding the most competitive direct exchange rates (COOP currency for host currency). Initially, Compassion can do this by asking for cross-rate quotes from the sources from which it currently exchanges dollars to host currency. For those currencies exchanged for through offshore trading companies, Compassion can ask for bids to exchange specified amounts of COOP currency as well as the standard US dollar bids. For those currencies exchanged for directly with the host country central banks, Compassion can obtain cross-rates (if available) from the banks. Later on, Compassion can seek out other sources by contacting organizations based in the COOP countries and asking how they exchange for developing country currency. Compassion may find out that those organizations use the dollar as an intermediary currency as well.

It is possible that Compassion already benefits from a sort of triangular arbitrage by using the dollar as an intermediary currency. Since the dollar is in high demand in many of the developing countries, the exchange rate for the dollar may be more favorable than that for any of the COOP currencies. If more beneficial rates exist for COOP currencies, they are likely between COOP countries and respective former colonies.

Compassion should not get bogged down by trying to seek out elusive arbitrage opportunities. Instead it should attempt to find the best sources of cross-rates, and where these rates result in more beneficial transactions than going through the dollar (as a result

of reduced transaction costs and perhaps an arbitrage opportunity), directly exchange the COOP currency for host currency. The next section discusses the issue of holding a diverse portfolio of currencies if Compassion finds that direct exchanges are available and beneficial.

5.3 DIVERSIFICATION OF THE CURRENCY PORTFOLIO

Portfolio diversity is concerned with the array of currencies which Compassion International handles and in which it holds excess funds. In for-profit parlance, Compassion operations are diverse both on the production and invoicing ends of operation. That is, Compassion works in 23 different countries to provide development and assistance projects for impoverished children. For these services, donors in six other countries (including the US) pay Compassion. Because the organization deals with 29 different currencies, its financial position is not determined solely by the value of any one. The cause of Compassion's exposure – dealing in so many currencies and thus having to exchange between them – also helps to minimize the total exposure by working with a diverse lot. This point should not be overstated, however, because the contributions come in different currencies than the expenditures (liabilities in host currencies). Additionally, 70% of the funding does come from the US, thereby making the dollar of particular importance. (The US dollar is also used as the common currency for accounting purposes and financial measurements. This use creates accounting exposure; however, this type of exposure is not within the scope of this analysis.)

Compassion also has a reserve of funds. At any one time, about 30-40% of sponsorship payments are prepaid. These funds are invested, used for internal capital

projects, and provide a buffer to smooth out month-to-month fluctuations in contributions and expenses. All of these funds are held in US dollars; therefore, when the dollar depreciates, the funds in holding can no longer buy as much host currency.

International financial prudence usually dictates that excess funds be held in a diverse portfolio of currencies. The COOP currencies make obvious candidates for inclusion in the portfolio. Other common hard currencies – German deutschemarks, Japanese yen, and Swiss francs – may also be viable choices. Of course, use of these currencies would mean additional transactions (and the associated costs). Compassion would not want to hold funds in host currencies. These soft currencies are too volatile and generally are depreciating. Disbursing funds to these countries on an as-needed (i.e., monthly) basis is the best policy as far as hedging is concerned.

To compare the value of the US dollar pool under the current system and the value of a diverse portfolio, I constructed a model which shows the US dollar value of funds if held over a period of time in the various currencies. Using historical financial data, the model demonstrates how the value of funds would have changed in an all-US dollar portfolio and in a diversified currency portfolio.

The model covers a five fiscal year period from July 1990 to June 1995. It assumes a constant contribution (measured in COOP currency) on a monthly basis from each of the five COOP countries. The contribution from each COOP is based on an estimation of its contributions over the test period. I used monthly data found in International Financial Statistics published by the International Monetary Fund (IMF) for the exchange rates and interest rates. The interest rates are based on Treasury bill rates except for France. In the latter case, Treasury bill rates were not consistently reported;

therefore, money market rates were substituted. The model only includes funds derived from COOP countries (i.e., none from US sources). To calculate the value of the US portfolio, COOP contributions were exchanged for US dollars on a monthly basis. The accumulating US dollar holdings earned interest on a monthly basis as well. To calculate the value of the diversified portfolio, all contributions were held and accumulated in the currencies from which they originated. These holdings earned monthly interest at the respective country rates. The model calculated the US dollar value of these funds on a monthly basis in order to compare it to the value of the US dollar portfolio. No withdrawals were made from the monthly accumulations. The following graph (Figure 4) tracks the changes in value for both portfolios.

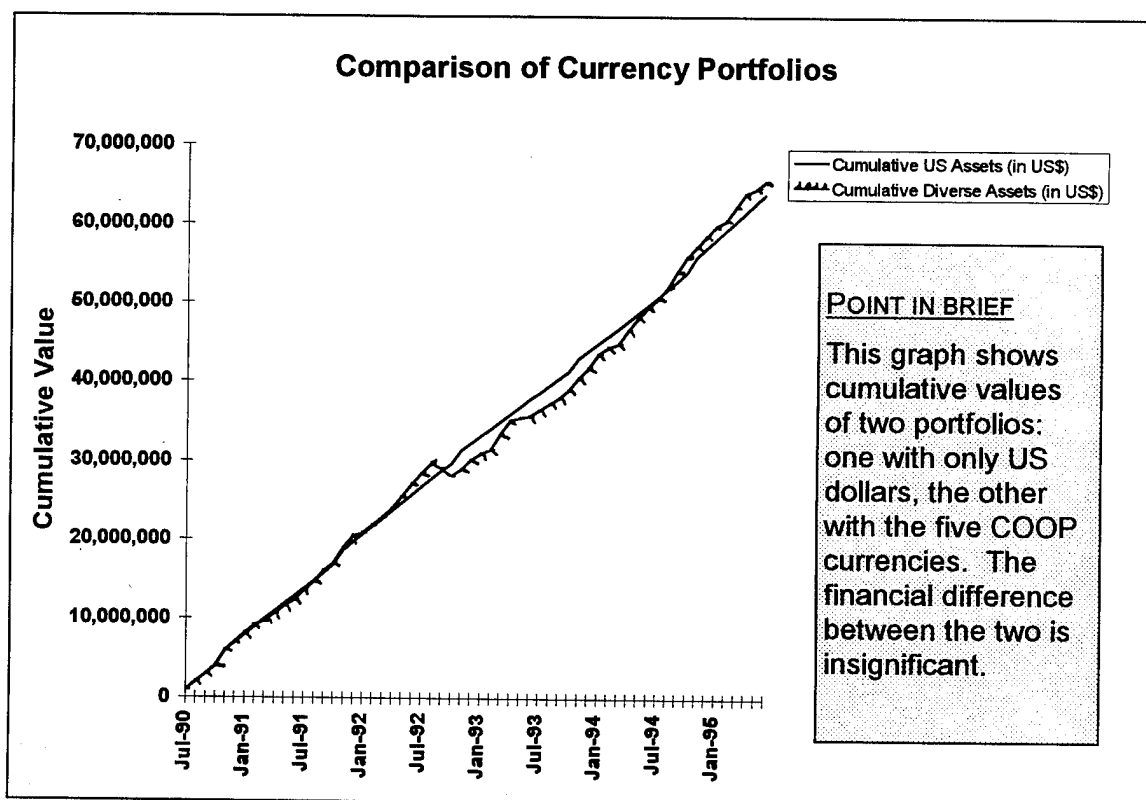


Figure 4: US Dollar Pool vs. Diversified Currency Portfolio

The diversified portfolio generally grew a little faster than the US dollar portfolio. The most significant exception was a drop in the value of the diversified portfolio in the latter half of 1992. In June 1995, the diversified portfolio was about 3% or \$1.85 million greater in value (US dollar value) than the US dollar fund. Because the exchange rates were based on IMF data, transaction costs were not factored in. Had they been considered, the difference between the two portfolios would have been a little larger. That said, it is reasonable to conclude that there is no significant difference between the two approaches with which Compassion should be concerned. This empirical evidence supports international financial theory which purports that exchange rates account for differences in foreign and domestic interest rates.¹²

The conclusion drawn from this exercise is that the decision to diversify or not does not significantly affect the value of Compassion's funds in holding. This conclusion assumes, of course, that Compassion would primarily seek low-risk investments like Treasury bills. Further analysis would have to be conducted in order to determine the relative returns of other types of investments (e.g., corporate bonds, equities, mutual funds).

¹² "Uncovered interest parity" theory deals directly with the relationship between exchange rates and interest rates. See Paul R. Krugman and Maurice Obstfeld, International Economics: Theory and Policy, 3d ed. (USA: HarperCollins College Publishers, 1994). p. 352+.

6. CONTRACTUAL HEDGES

In addition to operational measures, many organizations use contractual hedges to manage currency exposure. The operational hedges will probably be more beneficial for Compassion than contractual hedges; nonetheless, it is important for Compassion to understand these tools and how they could potentially reduce the uncertainty (risk) that the organization faces on a monthly basis. The organizational understanding of these tools is limited, and the predominant perception is that these tools are necessarily speculative methods involving excessive risk. That is not an uncommon condition in companies and certainly not in non-profit organizations. The fundamental misconception is that by doing nothing, Compassion is taking the most risk-averse position. On the contrary, the unhedged position (i.e., doing nothing) is the *riskiest* of Compassion's potential hedging positions. Hedging (as opposed to speculation) involves taking a position which is opposite an outstanding asset or liability. Regardless of which way the exchange rates move, the hedge and the outstanding asset/liability at least partially offset each other. That does not necessarily mean that Compassion should use a contractual hedge; it just means that the organization should realize that it could introduce more certainty into its currency management system (though usually at a cost).

Say that Compassion knows it will receive 200,000 British pounds in three months that it will want to exchange for US dollars. Compassion does not know what the exchange rate will be that month. If the spot rate increases (more dollars per pound), then in three months the 200,000 pounds will be worth more US dollars than 200,000 pounds are today; this would be a favorable shift. If the spot rate decreases (fewer dollars per

pound), then in three months the 200,000 pounds will be worth fewer US dollars than 200,000 pounds are today; this would be an unfavorable shift.

The purpose of contractual hedges is to reduce the short-term uncertainty inherent in currency exchange. The following graph (Figure 5) illustrates how the contractual hedges can reduce uncertainty. The graph shows how the amount of currency received from an exchange varies as the spot rate (exchange rate at the time of transaction) increases depending upon the hedging tool selected.

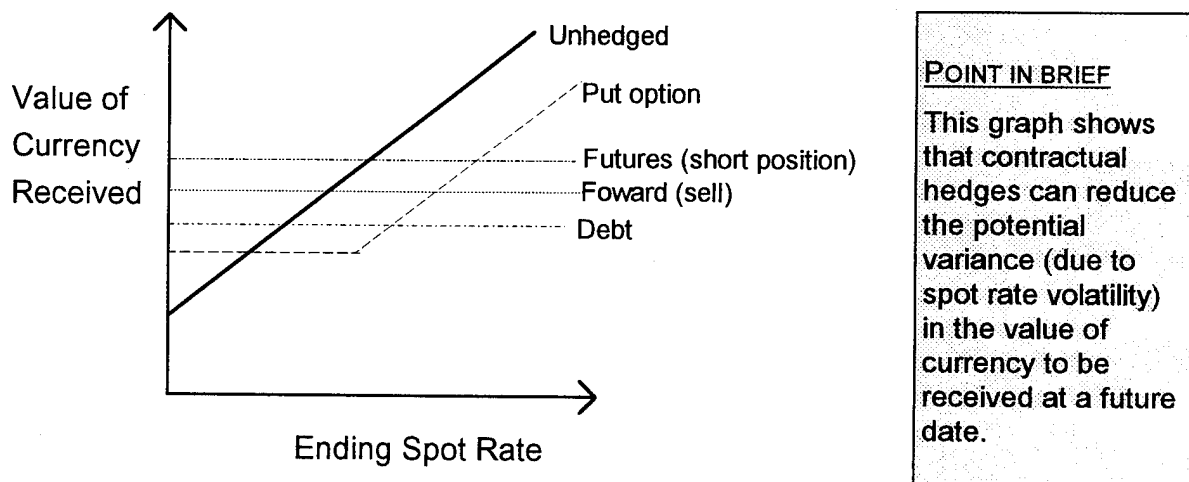


Figure 5: Contractual Hedging Tools for Foreign Asset

The organization can take one (or more) of several positions depending on how much it wants to hedge against foreign exchange rate fluctuation. The unhedged position shows that the value of the currency received varies directly with the spot rate at the end of the period. While this position allows the greatest benefit during a favorable shift in rates, it leaves Compassion vulnerable to unfavorable shifts.

The futures, forward, and debt positions provide absolute certainty concerning the value of currency received. Of course, such positions prevent one from benefiting from a

favorable shift in exchange rates. The relative values of the futures, forward, and debt positions could vary depending on the particular case being analyzed. That is, in some cases, a forward contract would be better than the other two; in other cases, the debt market hedge may be most beneficial.

The put option protects the downside (though not as much as the debt or forward positions) while allowing the organization to benefit from a favorable shift. Selection of one or more of the positions will depend on how the numbers work out for a specific case, how risk-averse an organization is, the feasibility of the positions for the organization, and the organization's estimated projection of future exchange rates.

Even though Compassion currently takes unhedged positions in almost all of its currency transactions, contractual tools do not offer much for the organization. Most of the contractual tools are unavailable or too expensive for use when exchanging for host currencies. The international financial markets are not yet developed to the point where they extensively include the currencies of developing countries. Compassion could use contractual hedges when converting COOP currency to US dollars; however, such use would not likely be worth the effort and expense. The purpose of these hedges is to reduce uncertainty. For Compassion, the greatest concern with uncertainty involves the amount of host currency realized each month. Since the greatest fluctuation in those amounts is due to the volatility of exchange rates involving the host currencies themselves, and not due to the volatility of COOP to dollar exchange rates, reducing the uncertainty in the latter would not benefit Compassion greatly. Furthermore, the uncertainty is not all

bad. Fluctuation in COOP to dollar rates benefits Compassion in many cases; therefore, Compassion should not use contractual tools as a general rule.

The following subsections provide a few specific comments about each of the primary contractual tools and their applicability to Compassion's needs.

6.1 DEBT (OR MONEY) MARKET HEDGE

The essence of a debt market hedge involves borrowing money now in one currency, immediately exchanging it for a second currency, and paying off the loan and interest at maturity with future expected cash inflows denominated in the first currency. Alternatively, the loan could be repaid with funds purchased at the future exchange rate. Given Compassion's aversion to debt in general, it is unlikely that the organization would want to assume such a position in order to hedge its foreign currency exposure. This particular position would be useful for exchanging one hard currency for another (i.e., COOP currency into US dollars), but probably not as good for exchanging a hard currency for a host currency. With a money market hedge, the second currency is received right away. Compassion would not want a host currency right away unless it was part of the normal monthly disbursement. Additionally, Compassion would have to deal with obtaining loans in foreign countries: something it might have trouble doing, and something it does not really have the manpower to do.

6.2 FORWARDS MARKET HEDGE

A forward market hedge involves contracting to sell or buy currency at a specified future date and price. Forward contracts are purchased from banks, and are the simplest of the hedges to arrange. However, they are generally unavailable for the host currencies.

6.3 SWAPS

Swaps exist in several forms. In general, swaps will probably not be the best approach for Compassion. One form is an agreement between two parties to exchange a given amount of two currencies, and after some period of time, return the original amounts. Compassion needs to exchange foreign currency permanently (which makes this type of swap useless). Furthermore, swaps can be difficult to arrange and do not usually provide an ongoing approach month after month. Compassion has participated in some debt swaps with Mexico. These have been beneficial, but are administratively burdensome and require inputs of very large amounts at one time.

6.4 OPTIONS MARKET HEDGE

Options are among the least used hedges, probably because they are more difficult to understand. Basically, an option is the right to buy (or sell) currency at a specific price. In some cases this right can be exercised only on a specified date; in others, it can be exercised at any point up to a specified date. Options do allow one to benefit from favorable shifts in foreign exchange rates while protecting against unfavorable shifts. If Compassion could even find someone with whom to draw up such a contract for a host currency, it would be very expensive. Like the other hedges, it could be used with COOP

currencies, but would not be as beneficial in reducing the uncertainty of host country disbursements.

6.5 FUTURES MARKET HEDGE

Futures are much like forwards in that one contracts to buy or sell a specified amount of currency at a specified future date and price. The difference is that futures contracts can be bought or sold at any time at an organized futures exchange, thereby realizing any gain or loss immediately. The cost for the hedge depends on the difference between the current spot rate and the future price. Again, these hedges are unavailable for host currencies.

7. NEXT STEPS FOR COMPASSION TO TAKE

Compassion International's next steps should follow up on the analysis performed by this project. The next logical step for Compassion to take is to determine the availability and competitiveness of cross-rates. Any savings in transaction costs and opportunities to exploit an arbitrage situation will be embedded in these cross-rates. If competitive (i.e., better) rates cannot be found on a systematic basis, then Compassion should continue under its current system. If competitive rates can be found, then Compassion should take advantage of them by exchanging COOP currency directly for host currency. Under such circumstances, the next step would be to analyze banking options and initiate an international banking relationship. Compassion will need the services of an international financial institution(s) which can handle accounts in multiple currencies. Once Compassion decides it will convert to host currencies directly from more than one contribution currency, it should investigate the investment opportunities available for each original currency. The investment opportunities will help determine whether excess funds should be held in each of the originating currencies or whether their accounts should be fully depleted each month. The pivotal step is the first one: analyzing available cross-rates.

7.1 *SEEK OUT COMPETITIVE CROSS-RATES*

The most significant change in operating procedures Compassion should consider based on this analysis is to directly exchange COOP currency for host currency. The decision on whether to do this or not pivots on the availability of competitive cross-rates.

A cross-rate is the rate for exchanging one of the COOP currencies directly for one of the host currencies. Such a cross-rate would be competitive if, by exchanging a specified amount of COOP currency directly for a host currency, one would get at least as much host currency as if the specified amount of COOP currency were first converted to US dollars which were subsequently exchanged for the host currency. Of course, for the endeavor to be worthwhile, the direct exchange should yield more host currency than the indirect exchange via the dollar.

In efficient currency markets, the extra yield would result solely from savings in transaction costs. In the inefficient markets of the host currencies, it is possible that some extra yield is derived from an arbitrage opportunity. On-the-other-hand, the dollar may be the currency which takes advantage of the arbitrage opportunity, in which case, Compassion is already doing the best it can do. In order to find out which case holds true for each of the host currencies, Compassion should request cross-rates from the applicable sources as discussed in Section 5.2 *Exploitation of Arbitrage Opportunities*. If competitive rates cannot be found on a systematic basis for a specific host currency, then Compassion should continue to use the dollar as an intermediary currency. If competitive rates can be found, then Compassion should take advantage of them by exchanging COOP currency directly for host currency. Then the next step would be to analyze banking options and initiate an international banking relationship in order to facilitate the transactions involving multiple COOP currencies.

7.2 INITIATE A RELATIONSHIP WITH AN INTERNATIONAL BANKING INSTITUTION

If competitive rates are found, Compassion will need the services of a financial institution(s) which can handle accounts in multiple currencies. Compassion will probably want to work with only one bank in order to lessen the administrative burden of banking. Banks will also provide better service and be more generous in waiving fees if a customer holds more funds with that institution. A bank which could handle the needs of Compassion would most likely be found in one of the international banking centers such as London, New York, and Singapore. Working with one non-local (outside of Colorado and perhaps outside of the US) bank will be difficult enough without having to deal with several. Compassion will want to consider the regulatory and tax implications of banking in various countries when choosing a bank. For instance, in some cases banks have more latitude if they do not work directly with any local businesses. One of the major considerations will be finding a bank which can handle speedy transactions. Finding a suitable bank and developing the appropriate working relationship is a highly variable endeavor involving personal interactions and negotiations. Suitable banks do exist; it is just a matter of identifying them and developing the relationship. One of the considerations in choosing a bank will be the interest rates it will pay on multiple currency deposits. Along those lines, Compassion will also want to investigate other foreign investment opportunities.

7.3 INVESTIGATE OVERSEAS INVESTMENT OPPORTUNITIES

Once Compassion decides to work with multiple COOP currencies, it should investigate the foreign investment opportunities which are compatible with its investment

philosophy. The level of returns on foreign investments will determine how much if any of Compassion's holdings the organization wants to maintain in foreign currency. If foreign returns are attractive, Compassion may want to hold some funds in the foreign currencies. If they are not, then Compassion can plan to fully deplete (or nearly so) foreign currency accounts on a monthly basis. When evaluating foreign investment opportunities, Compassion will at a minimum want to consider the following aspects of the investment: expected return, risk, liquidity (or term), minimum investment, regulatory and tax implications, and stability of the market. Foreign investment opportunities will not likely drive Compassion to diversify its portfolio (as demonstrated by the comparative portfolio model in Section 5.3 *Diversification of the Currency Portfolio*). However, if Compassion decides to have multiple currency accounts to benefit from favorable cross-rates, then it should investigate foreign investment opportunities and take advantage of the profitable ones.

8. CONCLUSIONS AND RECOMMENDATIONS

The purpose of this project was to provide a framework for Compassion International to use to evaluate and improve its international currency management system. The resulting framework examined Compassion's foreign exchange exposure, discussed operational measures and contractual hedges to reduce costs and manage exposure, and outlined the subsequent course of inquiry for Compassion to follow. Based on that analysis several conclusions were reached. A total of \$49.4 million dollars of Compassion's cash flows faces exposure in currency transactions on an annual basis. Exposure is not always bad, but it introduces a lot of uncertainty into the organization's financial undertakings. Furthermore, Compassion pays roughly \$370,500 in transaction costs each year. Compassion could potentially reduce some of the transaction costs and manage some of the exposure, thereby increasing the likelihood of favorable outcomes.

The project showed that contractual hedges are generally unavailable for use with host currencies, and there are few net benefits of using them with the COOP currencies. Operational measures offer some potential benefits to Compassion. Specifically, if Compassion exchanges COOP currency directly for host currency, the organization would likely pay less total transaction costs and possibly would gain from more competitive exchange rates (based on a form of arbitrage). Finally, the portfolio model shows that, given certain assumptions, there is not a significant financial difference between using a US pool for holding funds and having a diversified currency portfolio. The next logical step for Compassion to take is to determine the availability and competitiveness of cross-rates. If competitive rates cannot be found on a systematic basis, then Compassion should

continue under its current system. If competitive rates can be found, then Compassion should exchange COOP currency directly for host currency. Under such circumstances, the next step would be to analyze banking options and initiate an international banking relationship. Compassion will need the services of a financial institution(s) which can handle accounts in multiple currencies. Once Compassion decides it will convert to host currencies directly from more than one currency, it should investigate the investment opportunities available for each currency. The investment opportunities will help determine whether excess funds should be held in each of the originating currencies or whether their accounts should be fully depleted each month.

Compassion International is currently doing a good job of managing its currency flows. The project has revealed that fact by providing a formal assessment of the current system which shows the complexity of the environment in which it operates and the many constraints which limit better performance. The analysis has also identified the areas which could potentially be exploited to enhance the currency management. As the international financial environment changes, this framework can be used to re-evaluate the performance of Compassion's international currency management system as the organization seeks to improve its service to children through enhanced financial management.

Appendix: Host Country Exchange Rates FY95

Rates as Reported in Field Office Reports

	Budget	Jul-94	Aug-94	Sep-94	Oct-94	Nov-94	Dec-94	Jan-95	Feb-95	Mar-95	Apr-95	May-95	Jun-95
Africa													
Ethiopia	5.5	6.17	6.11	6.16	6.22	6.16	6.25	6.20	6.20	6.22	6.22	6.18	6.27
Kenya	65	57.02	56.84	56.76	51.50	44.30	48.25	46.96	46.68	47.03	46.25	46.77	54.71
Rwanda	145					200.00	210.00	215.00	215.00	232.00	240.00	251.48	268.00
Uganda	1128-1140	965.15	891.00	917.00	919.00	919.51	925.00	925.51	923.00	927.05	929.00	934.00	971.00
Zaire	105	1000.00	1600.00	1850.00	2450.00	2850.00	2900.00	3000.00	3300.00	3400.00	4000.00	4600.00	5600.00
Asia													
India	30.5-31	31.05	31.47	31.05	31.10	31.00	31.00	31.00	31.00	31.00	31.00	31.00	31.00
Indonesia	.2150-.2155	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
Philippines	26	26.53	25.96	26.22	25.55	24.67	23.95	24.31	24.39	25.61	25.74	25.65	25.60
Thailand	25	24.95	24.99	24.93	24.85	25.01	25.05	24.98	24.91	24.70	24.54	24.59	24.56
Middle America													
Dom. Rep.	12.75-12.80	13.12	13.24	13.62	13.62	13.91	13.20	13.20	13.75	13.77	13.77	13.80	13.98
Guatemala	5.5	5.73	5.50	5.79	5.79	5.77	5.65	5.62	5.70	5.70	5.73	5.73	5.75
Haiti	14.25-13.50	13.75	17.71	17.76	15.55	13.86	13.25	12.78	14.11	14.08	14.62	14.44	14.86
Mexico	3.302	3.37	3.37	3.36	3.35	3.42	3.42	5.09	5.78	5.92	6.78	5.90	6.11
South America													
Bolivia	4.70-5.13	4.64	4.68	4.67	4.68	4.69	4.70	4.73	4.76	4.76	4.76	4.77	4.80
Brazil		0.93	0.90	0.86	0.85	0.84	0.85	0.84	0.85	0.91	0.91	0.90	0.91
Colombia	815	814.95	809.75	811.45	837.33	834.26	826.50	828.33	852.00	854.21	869.87	878.15	876.00
Ecuador	2600	2220.00	2260.00	2270.00	2229.00	2320.00	2320.00	2392.00	2416.00	2420.00	2420.00	2471.00	2600.00
Peru	2.35-2.70	2.18	2.19	2.23	2.23	2.20	2.16	2.18	2.18	2.23	2.25	2.23	2.23

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